

```
#include<conio.h>
```

```
#include<stdio.h>
```

```
char arr[18][3]={{'E', '+', 'F'},{'E', '*', 'F'},{'E', '(', 'F'}, {'E', ')', 'F'},{'E', 'i', 'F'},{'E', '$', 'F'},  
{'F', '+', 'F'},{'F', '*', 'F'},{'F', '(', 'F'},{'F', ')', 'F'},{'F', 'i', 'F'},{'F', '$', 'F'}, {'T', '+', 'F'},  
{'T', '*', 'F'}, {'T', '(', 'F'},{'T', ')', 'F'},{'T', 'i', 'F'},{'T', '$', 'F'}};
```

```
char prod[] = "EETTFF";
```

```
char res[6][3] = { {'E', '+', 'T'}, {'T', '\0'}, {'T', '*', 'F'}, {'F', '\0'}, {'(', 'E', ')'}, {'i', '\0'}};
```

```
char stack [5][2];
```

```
int top = -1;
```

```
void install(char pro, char re) {
```

```
    int i;
```

```
    for (i = 0; i < 18; ++i) {
```

```
        if (arr[i][0] == pro && arr[i][1] == re) {
```

```
            arr[i][2] = 'T';
```

```
            break;
```

```
        }
```

```
    }
```

```
    ++top;
```

```
    stack[top][0] = pro;
```

```
    stack[top][1] = re;
```

```
}
```

```
int main() {
```

```
    int i = 0, j;
```

```
    char pro, re, pri = ' ';
```

```
    for (i = 0; i < 6; ++i) {
```

```

    for (j = 0; j < 3 && res[i][j] != '\0'; ++j) {
        if (res[i][j] == '+' || res[i][j] == '*' || res[i][j] == '(' || res[i][j] == ')' || res[i][j] == 'i' || res[i][j] ==
'$') {
            install(prod[i], res[i][j]);
            break;
        }
    }
}

while (top >= 0) {
    pro = stack[top][0];
    re = stack[top][1];
    --top;
    for (i = 0; i < 6; ++i) {
        if (res[i][0] == pro && res[i][0] != prod[i]) {
            install(prod[i], re);
        }
    }
}

for (i = 0; i < 18; ++i) {
    printf("\n\t");
    for (j = 0; j < 3; ++j)
        printf("%c\t", arr[i][j]);
}

getch();
printf("\n\n");
for (i = 0; i < 18; ++i) {
    if (pri != arr[i][0]) {
        pri = arr[i][0];
        printf("\n\t%c -> ", pri);
    }
    if (arr[i][2] == 'T')

```

```
        printf("%c ", arr[i][1]);  
    }  
    getch();  
}
```

